

Marine Engineering Exam Resource – Review of Conveyors

1. Name two parts of a conveyor belt?
Carcass - strength plies. Cover - protects the carcass from abrasion, impact damage and moisture.
2. Why is the cover thicker on top than on bottom?
Protects from impact damage.
3. Name three harmful conditions for belts?
 - a) Moisture - mildew and fungus
 - b) Sunlight - harden, crack.
 - c) Oil and grease - soften
 - d) Heat - harden
 - e) Solvents - soften
 - f) Cold - cracking, slipping
4. How do you store belts?
In crate or original wrapping. Hang with bar through center. On wood instead of cement floor, stand on end.
5. How would you install a new belt?
Attach to new belt and jog motor through so new belt is taken through system. Use pulling plate.
6. How are conveyor belts joined?
Plate or bottom. Alligator clips, Bulldog, Vulcanizing.
7. Name two basic styles of conveyors?
Trough - For carrying loose cargo. Slide - Flat surface for cases, boxes etc.
8. What are idlers name two types?
They provide support for belt. Carrying idlers - support load. Return idlers - support return belts. Side Guide Idlers - Help track. Adjustable idlers. - Help track
9. How are idlers lined up?
They should lie mounted 90 degrees to center of belt or they may cause the belt to run to one side.
10. What is the chief cause of idler trouble?
Material jamming against idler. Under lubrication, Over lubrication.
11. What problems occur from over-lubricating idlers?
The oil and grease can get on the belt causing deterioration.
12. Why is the idler spacing not always constant?
More idlers are required at the tail pulley area, as this is where a belt is loading, also be the area of less tension.

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13. What is a loading chute and baffle?
Chute - loads belt in center at same direction of conveyor travel. Baffle - reduces impact or changes direction of material travel down chute onto conveyor.
14. How do you reduce loading impact?
Load between idlers. Use impact idlers. Use baffles. Load material on belts at same speed as belt is traveling.
15. Explain skirt boards and skirting?
Skirt board - used on side of conveyor to keep material from falling off the side. Skirting - attached to skirt board to come in contact with belt.
16. Why are scrapers needed?
To keep belt clean which help avoids tracking problems.
17. What is a snub pulley and why is it used?
Used to increase the area of contact with the drive drum. Can also be used to track belt.
18. How is the belt cut and joined when the tail pulley is fairly small in diameter?
Cut at 45-degree angle. Not as much stress. More fasteners.
19. If the belt slips when the tension is correct, name some correct measures?
Lag drive pulley. Use snub. Clean pulleys. Use limestone powder if wet.
20. Explain the following pulley terms.
Head pulley - drive pulley, usually a large pulley.
Snub pulley - make move constricted on pulley with pressure on belt.
Bend pulley - used to change direction of belt travel.
Take - up pulley - put tension on pulley.
Tail pulley - end of conveyor, returns belt.
21. Why is dutchman used in conveyor belting?
It is a section of belt in a new belt that can later be removed as belt stretches. Usually allow 5% for stretch.
22. What is a bucket elevator?
A vertical conveyor system using buckets attached to belt or chain used for moving loose material.
23. Why are drive pulleys lagged?
Extra pull. Tracking. Stop slippage.
24. Why are screw conveyors used?
To provide a dust free methods of conveying loose material for horizontal or vertical.
25. Where should the drive roller be on an incline conveyor?
At the head pulley on single direction. At midpoint underneath on reversing conveyors.

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26. Name the three types of bearings required in a screw conveyor and the reasons for their use?
Thrust bearing. Support the thrust from the screw? Opposite way from material. Radial bearing - Support the screw when turning.
27. What is the pitch of a screw conveyor?
28. Can the screws in screw conveyors have right and left-hand helix's?
Yes
29. Which way does a belt travel on a belt conveyor?
From the tail to the head
30. What type of conveyor needs a backstop?
Incline conveyor or bucket. Stop conveyor from falling back.
31. When installing buckets on a bucket elevator, why is it important that the buckets be square to the line of travel?
Tracking problems. Buckets will catch side of elevator.
32. In what order should a bucket elevator be shut down?
Turn off feed. Clean out material in buckets. Turn off elevators.
33. What type of action does an air conveyor have that handles fine dry materials?
Fluid action. Air is mixed with material.
34. Why is type AR plate used for conveyor lining.
Impact and wear. AR (abrasion and resistance)
35. What type of chain can be assembled or disassembled without the use of a pin to join adjacent links?
Detachable chains.
36. Why do chain conveyors have a slight camber?
Chain will ride against the bottom not allowing material to build underneath.
37. Which way do you move a belt to correct belt run off?
Side which belt is running should be tightened. Side belt is running from should be loosened.
38. Correction of run off at all points of the line by the entire conveyor belt is done by doing what?
Adjust the trimming idlers. This is the side guide idlers.
39. How are small nicks and tears quickly repaired on a conveyor belt?
By using two plate fasteners.
40. What is the minimum length of a splice for a bucket elevator when the belt has 10 plies or less.

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41. In an emergency situation you have a conveyor belt with gravity take ups that is slipping. How could you overcome this problem?
More weight on take up.
42. You have a conveyor system that is constantly wet and the belt slips. How do you solve this problem?
Find the water and stop it. Use lime powder. Lagging head pulley.
43. What type of spicing is used for fabric belt?
Vulcanized spice.
44. Which end of a screw conveyor is a thrust bearing required?
Oppressed end of material travel if single direction. (loading end) both directions conveyor ends.
45. What is the best type of roller for training a belt?
Training rollers (side guide) crown roller.
46. What is the purpose of a ribbed drive roller?
Increase grip on belt. Better tracking.
47. Which direction can a screw conveyor be used?
Any direction.